REMARKS

Applicant respectfully requests reconsideration and allowance of the subject application. Claims 1-40 are amended. Claims 1-40 are pending in this application.

In the October 6 Office Action, the Examiner requested that any response be accompanied by a 3½ inch IBM format floppy disk containing a duplicate copy of the response. In accordance with this request, such a floppy disk accompanies this response.

As part of this amendment, claims 1-40 have been amended to correct various informalities and/or further distinguish over the cited references. The amendments to claims 1-40 have not been made to overcome the cited references, and are not to be interpreted as having been made to overcome the cited references.

35 U.S.C. § 103

Claims 1 and 8 stand rejected under 35 U.S.C. §103 as being unpatentable over U.S. Patent No. 5,835,765 to Matsumoto (hereinafter "Matsumoto") in view of U.S. Patent No. 5,881,284 to Kubo (hereinafter "Kubo"). Applicant respectfully submits that claims 1 and 8 are not obvious over Matsumoto in view of Kubo.

Matsumoto discloses a computer operation management system for execution in a computer system (see, col. 8, lines 48-60). The computer operation management system includes various components, including a computer resource manager, an error recovery processor, and an error communication means (see, Fig. 2, and col. 9, line 11 - col. 10, line 45). The computer resource manager

compares the actual amount of memory used with a control limit, and notifies the error recovery processor and error communication means if the control limit is exceeded (see, col. 16, lines 28-35). Such notification causes the system to read an error recovery procedure from a program definition and notify the operator of the error in accordance with the defined error recovery procedure (see, Fig. 13, and col. 17, lines 49-57).

Kubo discloses a method of scheduling jobs in a clustered computer system to enhance a load balance between respective clusters (see, col. 1, lines 5-9 an 54-61). A job selector stores identifiers of clusters which have space for accepting and running new jobs (see, col. 3, lines 15-18), and is responsible for selecting jobs for the various clusters (see, col. 1, line 66 - col. 2, line 11; col. 3, lines 54-59; and col. 4, lines 4-8).

With respect to **claim 1**, the October 6 Office Action (at ¶2, page 2) asserted that:

> Matsumoto does not teach the multiple memory thresholds in connection with controlling applications. Kubo teaches setting a plurality of memory thresholds (threshold values are provided, c41 l16-23). Also, Kubo teaches (job selector 4 selects ... on the basis of ... the resource utilization, c5 l25-30) which corresponds to the increasingly critical memory thresholds wielding increasing control over the applications.

Applicant respectfully disagrees. Claim 1 includes "at increasingly critical memory thresholds, wielding increasing operating system control over said one or more application programs". In contrast, threshold values in Kubo are used to determine whether resource utilization of a particular cluster is "high" or "not high" (see, col. 4, lines 10-23). Job selector 4 receives a request to schedule a new job for a cluster if the resource utilization of that cluster is not high; however if the

resource utilization of the cluster is high then job selector 4 does not schedule a new job for that cluster (see, col. 4, lines 4-9). Job selector 4 selects jobs for a particular cluster using various criteria, including possibly resource utilization (see, col. 5, lines 20-30).

The threshold values in Kubo are used to determine which particular cluster is to receive a job for execution. No change in control wielded over a job is changed by the threshold values – the job is executed regardless of what the threshold values indicate for particular clusters, it is simply a matter of which cluster will execute the job. Thus, Applicant respectfully submits that Kubo does not disclose wielding increasing control over applications at increasingly critical memory thresholds as claimed in claim 1.

Matsumoto is not cited as disclosing, and Applicant further submits that Matsumoto does not disclose or suggest, wielding increasing operating system control over one or more application programs as claimed in claim 1. Thus, Applicant respectfully submits that Matsumoto in view of Kubo does not disclose or suggest wielding increasing operating system control over one or more application programs as claimed in claim 1.

For at least these reasons, Applicant respectfully submits that claim 1 is not obvious over Matsumoto in view of Kubo.

With respect to **claim 8**, claim 8 depends from claim 1 and Applicant thus submits that claim 8 is allowable over Matsumoto in view of Kubo for at least the same reasons as discussed above with reference to claim 1. Furthermore, the October 6 Office Action (at ¶2, page 2) asserted that:

> . . . one skilled in the software engineering art, working on memory conservation, would have included a provision for discarding read-

only memory. The practice of efficiently managing memory directs disposal of storage sections that are not currently in use so that other pages can utilize the unused locations which are reserved but not needed/exploited.

Applicant respectfully disagrees. Claim 8 includes "at one or more of the memory thresholds, discarding read-only memory". Applicant respectfully submits that nowhere in either Matsumoto or Kubo is there a discussion or suggestion of discarding read-only memory at one or more of the memory thresholds as claimed in claim 8. The October 6 Office Action apparently asserts that the "practice of efficiently managing memory directs disposal of storage sections that are not currently in use", suggests discarding read-only memory at one or more of the memory thresholds as claimed in claim 8. However, claim 8 recites discarding read-only memory at one or more of the memory thresholds – no mention is made in claim 8 of whether the memory is or is not currently in use. Applicant respectfully submits that disposing of storage sections that are not in use does not disclose or suggest discarding read-only memory at one or more of the memory thresholds as claimed in claim 8.

For at least these reasons, Applicant respectfully submits that claim 8 is not obvious over Matsumoto in view of Kubo.

Claim 2 stands rejected under 35 U.S.C. §103 as being unpatentable over Matsumoto in view of Kubo and further in view of U.S. Patent No. 5,826,082 to Bishop et al. (hereinafter "Bishop"). Applicant respectfully submits that claim 2 is not obvious over Matsumoto in view of Kubo and Bishop.

With respect to **claim 2**, claim 2 depends from claim 1 and Applicant thus submits that claim 2 is allowable over Matsumoto in view of Kubo for at least the reasons discussed above with reference to claim 1. Applicant respectfully submits

that Bishop is not cited as curing, and does not cure, the deficiencies of Matsumoto and Kubo with respect to claim 1.

Applicant submits that claim 2, as originally filed, is patentable over Matsumoto in view of Kubo and Bishop. Nonetheless, Applicant has amended claim 2 to further distinguish claim 2 over the cited references.

The October 6 Office Action (at ¶3, page 3) asserted that:

> . . . Bishop teaches at a less critical memory threshold (resource manager determines in decision block 204, c4 l52-62) interacting with at least one of the application programs to limit its use of memory (suspend a prior request, Id.).

Applicant respectfully submits that Bishop does not disclose or suggest "at a less critical memory threshold, communicating a request to at least one of the application programs for the at least one application program to limit its use of memory" as claimed in claim 2.

Bishop discloses a computer system including a resource manager that is responsible for allocation of the computer system's resources (see, col. 2, lines 35-37). A thread that needs a resource submits a request to the resource manager for the necessary resource including a requested amount of the resource (see, col. 3, lines 53-62). If the requested amount is not necessary, then the resource manager attempts to suspend a prior request (see, col. 4, lines 52-57; and col. 5, lines 23-31).

In contrast, claim 2 recites "communicating a request to at least one of the application programs for the at least one application program to limit its use of memory". Bishop discloses the resource manager suspending a prior request for resources, not communicating a request to an application program for the application program itself to limit its use of memory as claimed in claim 2.

Applicant respectfully submits that there is no discussion or suggestion whatsoever in Bishop of communicating a request to an application program for the application program itself to limit its use of memory as claimed in claim 2.

For at least these reasons, Applicant respectfully submits that claim 2 is not obvious over Matsumoto in view of Kubo and Bishop.

Claims 3 and 4 stand rejected under 35 U.S.C. §103 as being unpatentable over Matsumoto in view of Kubo and further in view of U.S. Patent No. 5,815,702 to Kannan et al. (hereinafter "Kannan"). Applicant respectfully disagrees.

With respect to **claim 3**, claim 3 depends from claim 1 and Applicant thus submits that claim 3 is allowable over Matsumoto in view of Kubo for at least the same reasons as discussed above with reference to claim 1. Applicant respectfully submits that Kannan is not cited as curing, and does not cure, the deficiencies of Matsumoto and Kubo with respect to claim 1.

Applicant submits that claim 3, as originally filed, is patentable over Matsumoto in view of Kubo and Kannan. Nonetheless, Applicant has amended claim 3 to further distinguish claim 3 over the cited references.

The October 6 Office Action (at ¶4, page 3) asserted that:

> . . . Kannan teaches prompting a user to designate at least one of the applications programs (prompt 400 provides instructions 411, c7 l34-48) and then requesting it to close itself (user close 319 the application, which in turn causes the operating system 111 to terminate 321 the application 105 and reclaim any of its resources, c8 l4-13).

Applicant respectfully submits that Kannan does not disclose or suggest "prompting a user to select at least one of the application programs and then the operating system requesting that the at least one selected application program close itself" as claimed in claim 3. Kannan discloses a system in which a user is

able to continue using an application that has generated a fatal exception that would otherwise have caused the operating system to terminate execution of the application (see, col. 2, lines 39-43). When a fatal exception is detected, a crash guard process displays a warning dialog notifying the user of the "offending" application in which the fatal exception was detected (see, Fig. 4, and col. 7, lines 34-42). The warning dialog further allows the user to continue working or terminate the application (see, Fig. 4, and col. 7, lines 42-47).

In contrast, claim 3 recites "prompting a user to select at least one of the application programs and then the operating system requesting that the at least one selected application program close itself". Kannan discloses notifying the user of an application that caused a fatal exception to occur, not prompting a user to select an application program that is to close itself as claimed in claim 3. Applicant respectfully submits that there is no discussion or suggestion whatsoever in Kannan of prompting a user to select an application, much less of the operating system then requesting that the selected application close itself as claimed in claim 3.

For at least these reasons, Applicant respectfully submits that claim 3 is not obvious over Matsumoto in view of Kubo and Kannan.

With respect to **claim 4**, claim 4 depends from claim 1 and Applicant thus submits that claim 4 is allowable over Matsumoto in view of Kubo for at least the same reasons as discussed above with reference to claim 1. Applicant respectfully submits that Kannan is not cited as curing, and does not cure, the deficiencies of Matsumoto and Kubo with respect to claim 1.

With respect to claim 4, Applicant submits that claim 4, as originally filed, is patentable over Matsumoto in view of Kubo and Kannan. Nonetheless,

Applicant has amended claim 4 to further distinguish claim 4 over the cited references. Furthermore, analogous to the discussion above regarding claim 3, Applicant respectfully submits that there is no disclosure or suggestion in Kannan of prompting a user to select at least one of the applications programs to be terminated as claimed in claim 4. For at least the same reasons as discussed above with reference to claim 1.

Claim 5 stands rejected under 35 U.S.C. §103 as being unpatentable over Matsumoto in view of Kubo and further in view of Bishop and U.S. Patent No. 5,317,752 to Jewett et al. (hereinafter "Jewett"). Applicant respectfully disagrees.

With respect to **claim 5**, Applicant respectfully submits that Jewett and claim 5 are directed to nonanalogous arts. Claim 5 is directed to a method of controlling memory usage in a computer system having limited physical memory, whereas Jewett is directed to a shutdown and restart procedure in the event of a power failure (see, col. 1, lines 25-28; and col. 2, line 45 – col. 3, line 9). Thus, Applicant respectfully submits that Jewett is not a valid §103 reference for rejecting claim 5.

However, assuming for the sake of argument that Jewett and claim 5 are directed to analogous arts, claim 5 depends from claim 1 and Applicant thus submits that claim 5 is allowable over Matsumoto in view of Kubo for at least the reasons discussed above with reference to claim 1. Applicant respectfully submits that neither Bishop nor Jewett is cited as curing, and that neither does cure, the deficiencies of Matsumoto and Kubo with respect to claim 1.

Analogous to the discussion above regarding claim 2, Applicant respectfully submits that Bishop does not disclose or suggest "at a first memory threshold, requesting at least one of the application programs to limit its use of

memory" as claimed in claim 5. Furthermore, Applicant respectfully submits that Jewett is not cited as curing, and does not cure, the deficiencies of Bishop.

Furthermore, the October 6 Office Action (at ¶5, page 4) asserted that:

> Jewett teaches (processes ... perform some cleanup activity as required for the particular application, c25 l3-11) which corresponds to at a second memory threshold, requesting at least one of the application programs to close itself.

Applicant respectfully submits that Jewett does not disclose or suggest "at a second memory threshold, requesting at least one of the application programs to close itself" as claimed in claim 5. Jewett discloses that a power failure is sensed and a shutdown time period provided in which active processes will be given a warning of the impending shutdown so that they can perform any preparations necessary (see, col. 22, lines 38-65). Applicant respectfully submits that allowing a process to prepare for an impending shutdown due to a power failure does not disclose or suggest at a second memory threshold, requesting at least one of the application programs to close itself as claimed in claim 5.

For at least these reasons, Applicant respectfully submits that claim 5 is not obvious over Matsumoto in view of Kubo and further in view of Bishop and Jewett.

With respect to **claim 6**, claim 6 was apparently rejected for the same rationale as claims 2-4 (see, October 6 Office Action at ¶5, page 4). Applicant respectfully submits that, for at least reasons analogous to the discussions above regarding claims 2-4, the cited references do not disclose or suggest the method of claim 6.

Claim 7 stands rejected under 35 U.S.C. §103 as being unpatentable over Matsumoto in view of Kubo and further in view of U.S. Patent No. 5,950,221 to

Draves et al. (hereinafter "Draves"). Applicant respectfully submits that claim 7 is not obvious over Matsumoto in view of Kubo and Draves.

With respect to **claim 7**, claim 7 depends from claim 1 and Applicant thus submits that claim 7 is allowable over Matsumoto in view of Kubo for at least the same reasons as discussed above with reference to claim 1. Applicant respectfully submits that Draves is not cited as curing the deficiencies of Matsumoto and Kubo with respect to claim 1. For at least these reasons, Applicant respectfully submits that claim 7 is not obvious over Matsumoto in view of Kubo and Draves.

With respect to **claims 9-16**, claims 9-16 were apparently rejected for the same rationale as claims 1-8 (see, October 6 Office Action at ¶6, page 4). Applicant respectfully submits that, analogous to the discussions above regarding claims 1-8, the cited references do not disclose or suggest the computer-readable storage mediums of each of claims 9-16.

Furthermore, claim 12 includes "requiring a user to select one of the application programs to be closed" and "requiring a user to select one of the application programs to be terminated". Analogous to the discussions above, Applicant respectfully submits that there is no disclosure or suggestion of prompting a user to select an application program, much less of requiring a user to select one of the application programs as claimed in claim 12.

For at least these reasons, Applicant submits that claims 9-16 are allowable over the cited references.

With respect to **claim 17**, claim 17 was apparently rejected for the same rationale as claims 5-8 (see, October 6 Office Action at ¶6, page 4). Applicant respectfully submits that, for at least reasons analogous to the discussions above

regarding claims 5-8, the cited references do not disclose or suggest the method of claim 17.

With respect to **claims 18-19**, claims 18 and 19 depend from claim 17 and Applicant thus submits that claims 18 and 19 are allowable over the cited references for at least the same reasons as discussed above with reference to claim 17. Furthermore, the October 6 Office Action asserted, (at ¶6, page 4), that:

> . . . the recitations regarding the reclaiming and discarding in connection with further thresholds would have been obvious modifications -- variations on claim 17 above.

Applicant respectfully disagrees. Applicant respectfully submits that there is no suggestion in the cited references of reclaiming unused stack memory and discarding read-only memory being performed at particular memory usage thresholds in conjunction with the additional actions performed at those particular memory usage thresholds as claimed in claims 18 and 19.

For at least these reasons, Applicant submits that the cited references do not disclose or suggest the methods of each of claims 18 and 19.

With respect to **claim 20**, claim 20 was apparently rejected for the same rationale as claims 3-5 (see, October 6 Office Action at ¶6, page 4). Applicant respectfully submits that, for at least reasons analogous to the discussions above regarding claims 3-5, the cited references do not disclose or suggest the method of claim 20.

With respect to **claim 21**, claim 20 was apparently rejected for the same rationale as claim 20 (see, October 6 Office Action at ¶6, page 4). Applicant respectfully submits that, for at least reasons analogous to the discussions above

regarding claims 20 and 12, the cited references do not disclose or suggest the method of claim 21.

With respect to **claim 22**, claim 22 was apparently rejected for the same rationale as claim 17 (see, October 6 Office Action at ¶6, page 4). Applicant respectfully submits that, for at least reasons analogous to the discussions above regarding claim 17, the cited references do not disclose or suggest the computer-readable storage medium of claim 22.

With respect to **claim 23**, claim 23 was apparently rejected for the same rationale as claim 1 (see, October 6 Office Action at ¶6, page 5). Applicant respectfully submits that, for at least reasons analogous to the discussions above regarding claim 1, the cited references do not disclose or suggest the computer system of claim 23.

With respect to **claims 24-30**, claims 24-30 were apparently rejected for the same rationale as claims 2-8 (see, October 6 Office Action at ¶6, page 5). Applicant respectfully submits that, for at least reasons analogous to the discussions above regarding claims 2-8, the cited references do not disclose or suggest the computer systems of each of claims 24-30.

With respect to **claim 31**, claim 31 was apparently rejected for the same rationale as claim 20 (see, October 6 Office Action at ¶6, page 5). Applicant respectfully submits that, for at least reasons analogous to the discussions above regarding claim 20, the cited references do not disclose or suggest the computer system of claim 31.

With respect to **claims 32 and 33**, claims 32 and 33 were apparently rejected for the same rationale as claim 2 (see, October 6 Office Action at ¶6, page 5). Applicant respectfully submits that, for at least reasons analogous to the

discussions above regarding claim 2, the cited references do not disclose or suggest the methods of each of claims 32 and 33.

Claims 34 and 35 stand rejected under 35 U.S.C. §103 as being unpatentable over Matsumoto in view of Kubo and Bishop and further in view of Kannan. Applicant respectfully submits that claims 34 and 35 are not obvious over Matsumoto in view of Kubo, Bishop, and Kannan.

With respect to **claims 34 and 35**, claims 34 and 35 each depend from claim 32 and Applicant thus submits that claims 34 and 35 are allowable over Matsumoto in view of Kubo and Bishop for at least the reasons discussed above with reference to claim 32. Applicant respectfully submits that Kannan is not cited as curing, and that Kannan does not cure, the deficiencies of Matsumoto, Kubo, and Bishop with respect to claim 32. For at least these reasons, Applicant respectfully submits that claims 34 and 35 are not obvious over Matsumoto in view of Kubo and Bishop and further in view of Kannan.

With respect to **claims 36-39**, claims 36-39 were apparently rejected for the same rationale as claims 32-35 (see, October 6 Office Action at ¶7, page 5). Applicant respectfully submits that, for at least reasons analogous to the discussions above regarding claims 32-35, the cited references do not disclose or suggest the computer-readable storage mediums of each of claims 36-39.

Claim 40 stands rejected under 35 U.S.C. §103 as being unpatentable over Kannan in view of Bishop. Applicant respectfully submits that claim 40 is not obvious over Kannan in view of Bishop.

With respect to **claim 40**, Applicant respectfully submits that, analogous to the discussions above, neither Kannan nor Bishop discloses or suggests an application program being responsive to reduce its current use of memory as

claimed in claim 40. Analogous to the discussions above regarding claim 2, Bishop discloses a resource manager suspending a prior request for resources, not an application program being responsive to reduce its own current use of memory as claimed in claim 40.

For at least these reasons, Applicant respectfully submits that claim 40 is not obvious over Kannan in view of Bishop.

Applicant respectfully requests that the §103 rejections be withdrawn.

Conclusion

Claims 1-40 are in condition for allowance. Applicant respectfully requests reconsideration and issuance of the subject application. Should any matter in this case remain unresolved, the undersigned attorney respectfully requests a telephone conference with the Examiner to resolve any such outstanding matter.

Respectfully Submitted,

Date: 12/21/99

By: _____

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